

**REMARKS**

Claims 1-24 are pending in the application. Applicants gratefully acknowledge Examiner's indication that claims 3 and 14 comprise allowable subject matter and would be allowable if rewritten as indicated in the Office Action.

By the above amendment, claims 1, 3-8, 12-20 and 23 have been amended. Claims 2 and 13 have been canceled without prejudice. The Examiner's reconsideration of the rejections and objections is respectfully requested based on the above amendments and following remarks.

**Drawing Objections:**

Applicants have submitted Replacements Sheets including amended Figs. 1a, 1b, 2a, 2b, 3a, 3c, 4a 4b. Each of these figures has been amended to include a "Prior Art" legend as requested in the Office Action. Accordingly, withdrawal of the drawing objections is respectfully requested.

**Claim Objections:**

Claims 5, 6, 16 and 17 were objected to for the reasons set forth on pages 2-3 of the Office Action. Applicants have amended claims 5, 6, 16 and 17 to address the objections. Accordingly, withdrawal of the claim objections is respectfully requested.

**Claim Rejections - 35 U.S.C. § 102**

Claims 1 and 12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No 5,696,838 to Chiu et al., for the reasons set forth on Pages 3-4 of the Office Action.

Claims 1 and 12 are believed to be patentably distinct and patentable over Chiu. At the very minimum, Chiu does not disclose *normalizing the template image and input image with respect to brightness*, as recited in claims 1 and 12. Indeed, this deficiency of Chiu is acknowledged on Page 5 of the Office Action. Accordingly, withdrawal of the anticipation rejections is respectfully requested.

#### **Claim Rejections - 35 U.S.C. § 103**

The following claim rejections were asserted under 35 U.S.C. §103(a):

- (i) Claims 1 and 12 stand rejected as being unpatentable over U.S. Patent No. 6,611,622 to Krum and U.S. Patent No. 6,678,404 to Lee;
- (ii) Claims 2, 4, 5, 13, 15, and 16 stand rejected as being unpatentable over Chiu and U.S. Patent No. 6,658,149 to Wakahara;
- (iii) Claims 6 and 17 stand rejected as being unpatentable over Chiu, Wakahara and further in view of U.S. Patent No. 6,031,539 to Kang et al;
- (iv) Claims 7 and 18 stand rejected as being unpatentable over Chiu, Wakahara and further in view of U.S. Patent No. 6,307,914 to Kunieda;
- (v) Claims 8 and 19 stand rejected as being unpatentable over Chiu, Wakahara and further in view of U.S. Patent No. 6,445,822 to Crill;
- (vi) Claims 9, 10, 11, 20, 21 and 22 stand rejected as being unpatentable over Krumm and Lee and further in view of U.S. Patent No. 6,310,964 to Mohan; and finally
- (vii) Claims 23 and 24 stand rejected as being unpatentable over Chiu and Krumm.

By the above amendment, claims 1 and 12 were amended to include the subject matter of canceled claims 2 and 13, respectively. Therefore, claims 1 and 12 are essentially claims 2 and 13 written in independent form. Accordingly, the above obvious rejection (i) is moot and Applicants will address the above obvious rejection (ii) with respect to claims 1 and 12, which was initially asserted against claims 2 and 13.

Applicants respectfully submit that the combination of Chiu and Wakahara is legally deficient to establish a *prima facie* case of obviousness against claims 1 and 12. For example, the combination of Chiu and Wakahara does not teach or suggest, e.g., *normalizing the template image and input image with respect to brightness, and computing a correlation between the normalized template image and input image*, as essentially claimed in claims 1 and 12.

To begin, Examiner acknowledges that Chiu does not disclose the step of normalizing the template image and input image with respect to brightness (see bottom of Page 5 of the Office Action). To cure the deficiencies of Chiu, Examiner relies on Col. 9, lines 37-40, and Col. 10, lines 23-28 of Wakahara as disclosing these claim features (see Page 6, first paragraph, of the Office Action). However, Applicants respectfully submit that Examiner's reliance on Wakahara is misplaced in this regard.

In stark contrast, Wakahara discloses in the cited sections a *process of computing a normalized cross-correlation value between an affine-transformation-superimposed input gray scale image  $F^*$  and a target image  $G$*  (see, e.g., Col. 10, lines 18-28). As is well known in the art, affine transformation relates to transformation (e.g., rotation, scale, change, translation) and

not brightness (see, e.g., Col. 1, lines 30-55 of Wakahara). There is simply nothing in the cited sections of Wakahara that discloses or remotely suggests *normalizing the template image and input image with respect to brightness*, much less, *computing a correlation between the normalized template image and input image*, as essentially claimed in claims 1 and 12. Accordingly, for at least the above reasons, it is clear that the combination of Chiu and Wakahara does not render claims 1 and 12 obvious.

Moreover, with respect to the remaining claim objections (ii) ~ (vi) above, Applicants respectfully submit that claims 4-11 and 15-22, which depend from claims 1 and 12, respectively, are patentable over the cited combinations for at least the same reasons give above for claims 1 and 12.

Further, with regard to the rejection of claim 23 and 24, Applicants respectfully submit that at the very minimum, the combination of Chiu and Krumm fails to teach or suggest, e.g., *an image processor comprising a first marker recognition processor for recognizing a marker in the input image based on a template recognition normalized correlation method that normalizes a template image and input image with respect to brightness*, as essentially recited in claim 23, for at least the same reasons set forth above. Moreover, claim 24 is patentable over the cited combination at least by virtue of its dependence from claim 23.

Accordingly, for at least the above reasons, withdrawal of the obvious rejections is respectfully requested.

Applicants respectfully request favorable reconsideration of the application as now

presented. The Examiner is invited to contact the undersigned should he have any questions in this matter.

Respectfully submitted,



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